

Compact Fluorescent Light Bulbs (CFLs) Fact Sheet

The following Information was retrieved from the following Energy Star program website:
http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

Why should people use CFLs?

Switching from traditional light bulbs (called incandescent) to CFLs is an effective, simple change everyone in America can make right now. Making this change will help to use less electricity at home and prevent greenhouse gas emissions that lead to global climate change. Lighting accounts for close to 20 percent of the average home's electric bill. ENERGY STAR qualified CFLs use up to 75 percent less energy (electricity) than incandescent light bulbs, last up to 10 times longer, cost little up front, and provide a quick return on investment.

If every home in America replaced just one incandescent light bulb with an ENERGY STAR qualified CFL, in one year it would save enough energy to light more than 3 million homes. That would prevent the release of greenhouse gas emissions equal to that of about 800,000 cars.

Do CFLs contain mercury?

CFLs contain a very small amount of mercury sealed within the glass tubing – an average of 4 milligrams – about the amount that would cover the tip of a ballpoint pen. By comparison, older thermometers contain about 500 milligrams of mercury – an amount equal to the mercury in 125 CFLs. Mercury is an essential part of CFLs; it allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact (not broken) or in use.

Most makers of light bulbs have reduced mercury in their fluorescent lighting products. Thanks to technology advances and a commitment from members of the National Electrical Manufacturers Association, the average mercury content in CFLs has dropped at least 20 percent in the past year. Some manufacturers have even made further reductions, dropping mercury content to 1.4 – 2.5 milligrams per light bulb.

What are mercury emissions caused by humans?

The U.S. Environmental Protection Agency (EPA) estimates the U.S. is responsible for the release of 104 metric tons of mercury emissions each year. Most of these emissions come from coal-fired electrical power. Mercury released into the air is the main way that mercury gets into water and bio-accumulates in fish. (Eating fish contaminated with mercury is the main way for humans to be exposed.)

Most mercury vapor inside fluorescent light bulbs becomes bound to the inside of the light bulb as it is used. EPA estimates that the rest of the mercury within a CFL – about 11 percent – is released into air or water when it is sent to a landfill, assuming the light bulb is broken. Therefore, if all 290 million CFLs sold in 2007 were sent to a landfill (versus recycled, as a worst case) – they would add 0.13 metric tons, or 0.1 percent, to U.S. mercury emissions caused by humans.

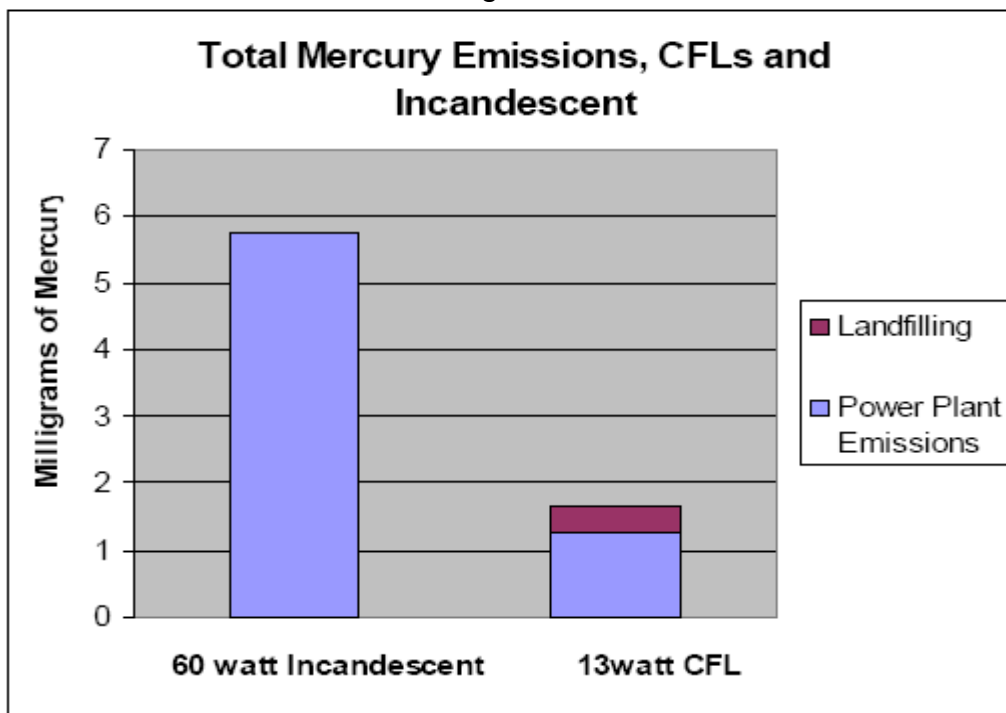
How do CFLs result in less mercury in the environment compared to traditional light bulbs?

Electricity use is the main source of mercury emissions in the U.S. CFLs use less electricity than incandescent lights, meaning CFLs reduce the amount of mercury into the environment. As shown in the table below, a 13-watt, 8,000-rated-hour-life CFL (60-watt equivalent; a common light bulb type) will save 376 kWh over its lifetime, thus avoiding 4.5 mg of mercury. If the bulb goes to a landfill, overall emissions savings would drop a little, to 4.2 mg. EPA recommends that CFLs are recycled where possible, to maximize mercury savings.

Table 1

Light Bulb Type	Watts	Hours of Use	kWh Use	National Average Mercury Emissions (mg/kWh)	Mercury from Electricity Use (mg)	Mercury From Landfilling (mg)	Total Mercury (mg)
CFL	13	8,000	104	0.012	1.2	0.4	1.6
Incandescent	60	8,000	480	0.012	5.8	0	5.8

Figure 1



Because CFLs also help to reduce greenhouse gasses, other pollutants associated with electricity production, and landfill waste (because the bulbs last longer), they are clearly the environmental winner when compared to traditional incandescent light bulbs.

What is mercury?

Mercury is an element (Hg on the periodic table) found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Coal-fired power plants

are the largest man-made source because mercury that naturally exists in coal is released into the air when coal is burned to make electricity. Coal fired power generation accounts for roughly 40 percent of the mercury emissions in the U.S.

The use of CFLs reduces power demand, which helps reduce mercury emissions from power plants.

For more information on all sources of mercury, visit <http://www.epa.gov/mercury>

For more information about compact fluorescent bulbs, visit <http://www.energystar.gov/cfls>

<p>The following guidance is provided by the Architect of the Capitol (AOC) for buildings within the Capitol complex and other AOC-managed facilities.</p>

What should I do with a CFL when it burns out or breaks?

The AOC ensures the proper clean-up and/or disposal of used or broken CFLs within the Capitol complex and other AOC-managed facilities. Please do not throw used or broken CFLs in the trash or attempt to clean-up broken CFLs. Instead, contact the AOC Superintendent's office to request clean-up and/or disposal.